

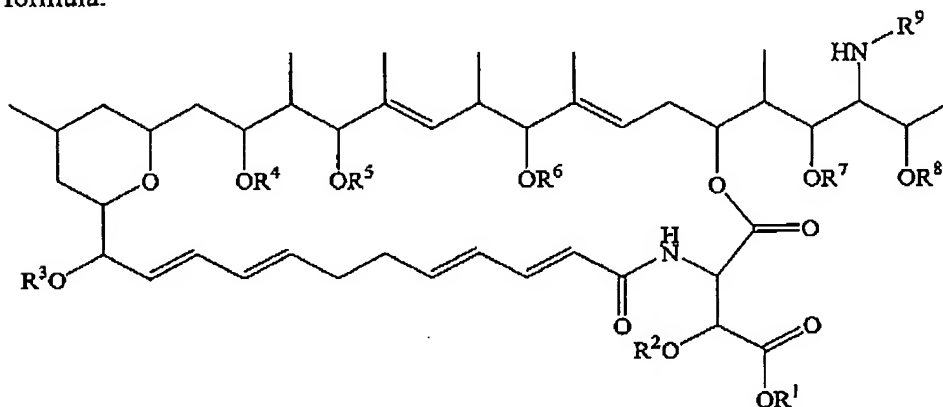
Application No. 10/521,930

Reply to Office Action

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A substantially purified compound of the formula:



(I),

wherein:

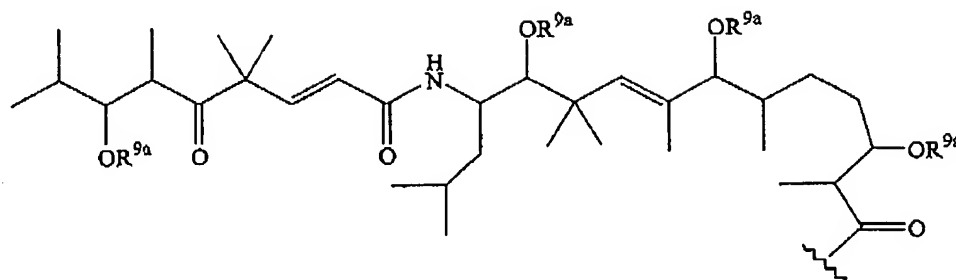
$R^1$  is H, a straight-chain or branched  $C_{1-30}$  saturated alkyl, a straight-chain or branched  $C_{2-30}$  unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof, wherein  $R^1$  is unsubstituted or substituted with one or more substituents, which are the same or different, selected from the group consisting of a halogen, an oxo,  $OR^{1a}$ ,  $CO_2R^{1a}$ , and  $OC(O)R^{1a}$ , wherein  $R^{1a}$  is H, a straight-chain or branched  $C_{1-30}$  saturated alkyl, a straight-chain or branched  $C_{2-30}$  unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof;

$R^2$ - $R^8$  are the same or different and each is  $R^{10}$ ,  $C(O)R^{10}$ ,  $SO_3R^{10}$ , or  $SO_2R^{10}$ , wherein  $R^{10}$  is H, a straight-chain or branched  $C_{1-30}$  saturated alkyl, a straight-chain or branched  $C_{2-30}$  unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof, wherein  $R^{10}$  is unsubstituted or substituted with one or more substituents, which are the same or different, selected from the group consisting of a halogen, an oxo,  $OR^{10a}$ ,  $CO_2R^{10a}$  and  $OC(O)R^{10a}$ , wherein  $R^{10a}$  is H, a straight-chain or branched  $C_{1-30}$  saturated alkyl, a straight-chain or branched  $C_{2-30}$  unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof; and

$R^9$  is a substituent of the formula:

Application No. 10/521,930

Reply to Office Action



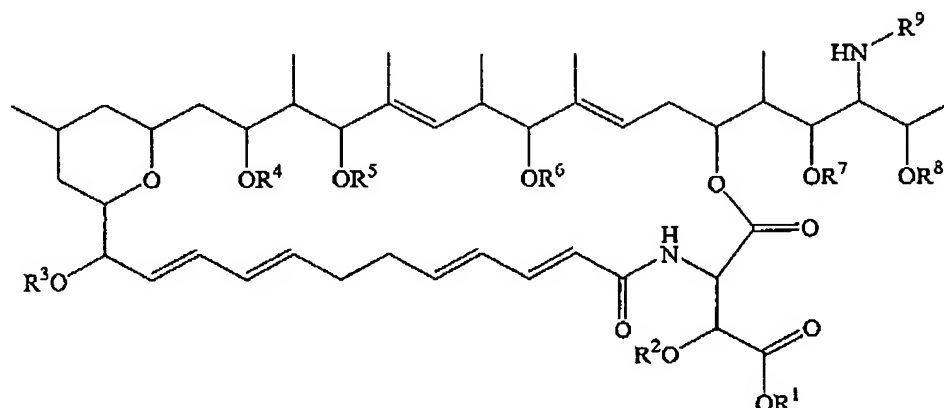
wherein the  $R^{9a}$  substituents are the same or different and each is  $R^{11}$ ,  $C(O)R^{11}$ , or  $SO_2R^{11}$ , wherein  $R^{11}$  is H, a straight-chain or branched  $C_{1-30}$  saturated alkyl, a straight-chain or branched  $C_{2-30}$  unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof, wherein  $R^{11}$  is unsubstituted or substituted with one or more substituents, which are the same or different, selected from the group consisting of a halogen, an oxo,  $OR^{11a}$ ,  $CO_2R^{11a}$  and  $OC(O)R^{11a}$ , wherein  $R^{11a}$  is H, a straight-chain or branched  $C_{1-30}$  saturated alkyl, a straight-chain or branched  $C_{2-30}$  unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof;

wherein  $R^{1a}$ ,  $R^{10a}$  and  $R^{11a}$  are unsubstituted or substituted with one or more substituents selected from the group consisting of a halogen, an oxo, and a hydroxyl; or a pharmaceutically acceptable salt or ~~prodrug~~ thereof.

2. (Original) The compound of claim 1, wherein  $R^1$ - $R^8$  are selected from the group consisting of H and a straight-chain or branched  $C_{1-30}$  saturated alkyl.
3. (Original) The compound of claim 2, wherein  $R^3$  is H or methyl.
4. (Original) The compound of claim 1, wherein  $R^{9a}$  is selected from the group consisting of H and a straight-chain or branched  $C_{1-30}$  saturated alkyl.
5. (Original) The compound of claim 4, wherein all of the  $R^{9a}$  substituents are H.
6. (Original) The compound of claim 1, wherein  $R^3$  is methyl and each of  $R^1$ ,  $R^2$ ,  $R^4$ - $R^8$  and  $R^{9a}$  are H.
7. (Original) A compound of the formula:

Application No. 10/521,930

Reply to Office Action



(I),

wherein:

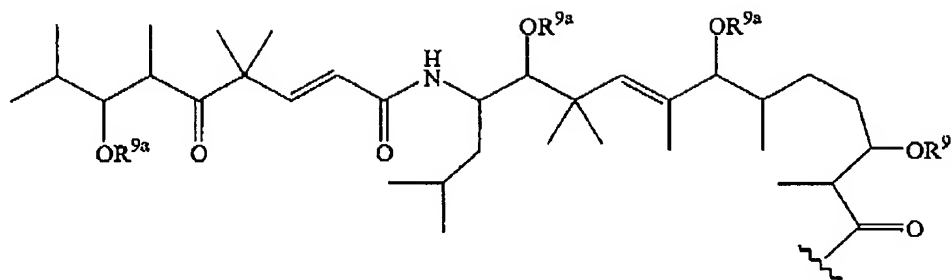
R<sup>1</sup> is H, a straight-chain or branched C<sub>1-30</sub> saturated alkyl, a straight-chain or branched C<sub>2-30</sub> unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof, wherein R<sup>1</sup> is unsubstituted or substituted with one or more substituents, which are the same or different, selected from the group consisting of a halogen, an oxo, OR<sup>1a</sup>, CO<sub>2</sub>R<sup>1a</sup>, and OC(O)R<sup>1a</sup>, wherein R<sup>1a</sup> is H, a straight-chain or branched C<sub>1-30</sub> saturated alkyl, a straight-chain or branched C<sub>2-30</sub> unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof;

R<sup>2</sup>-R<sup>8</sup> are the same or different and each is R<sup>10</sup>, C(O)R<sup>10</sup>, SO<sub>3</sub>R<sup>10</sup>, or SO<sub>2</sub>R<sup>10</sup>, wherein R<sup>10</sup> is H, a straight-chain or branched C<sub>1-30</sub> saturated alkyl, a straight-chain or branched C<sub>2-30</sub> unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof, wherein R<sup>10</sup> is unsubstituted or substituted with one or more substituents, which are the same or different, selected from the group consisting of a halogen, an oxo, OR<sup>10a</sup>, CO<sub>2</sub>R<sup>10a</sup> and OC(O)R<sup>10a</sup>, wherein R<sup>10a</sup> is H, a straight-chain or branched C<sub>1-30</sub> saturated alkyl, a straight-chain or branched C<sub>2-30</sub> unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof; and

R<sup>9</sup> is a substituent of the formula:

Application No. 10/521,930

Reply to Office Action



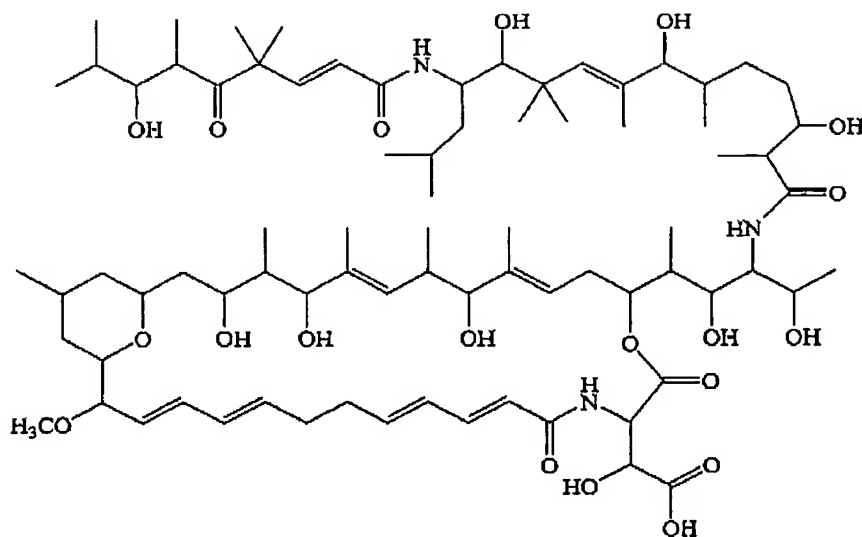
wherein the R<sup>9a</sup> substituents are the same or different and each is R<sup>11</sup>, C(O)R<sup>11</sup>, or SO<sub>2</sub>R<sup>11</sup>, wherein R<sup>11</sup> is H, a straight-chain or branched C<sub>1-30</sub> saturated alkyl, a straight-chain or branched C<sub>2-30</sub> unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof, wherein R<sup>11</sup> is unsubstituted or substituted with one or more substituents, which are the same or different, selected from the group consisting of a halogen, an oxo, OR<sup>11a</sup>, CO<sub>2</sub>R<sup>11a</sup> and OC(O)R<sup>11a</sup>, wherein R<sup>11a</sup> is H, a straight-chain or branched C<sub>1-30</sub> saturated alkyl, a straight-chain or branched C<sub>2-30</sub> unsaturated alkyl, or an aryl comprising 6-10 carbon atoms in the ring skeleton thereof;

wherein R<sup>1a</sup>, R<sup>10a</sup> and R<sup>11a</sup> are unsubstituted or substituted with one or more substituents selected from the group consisting of a halogen, an oxo, and a hydroxyl; or a pharmaceutically acceptable salt thereof, provided that the compound is not poecillastrin A.

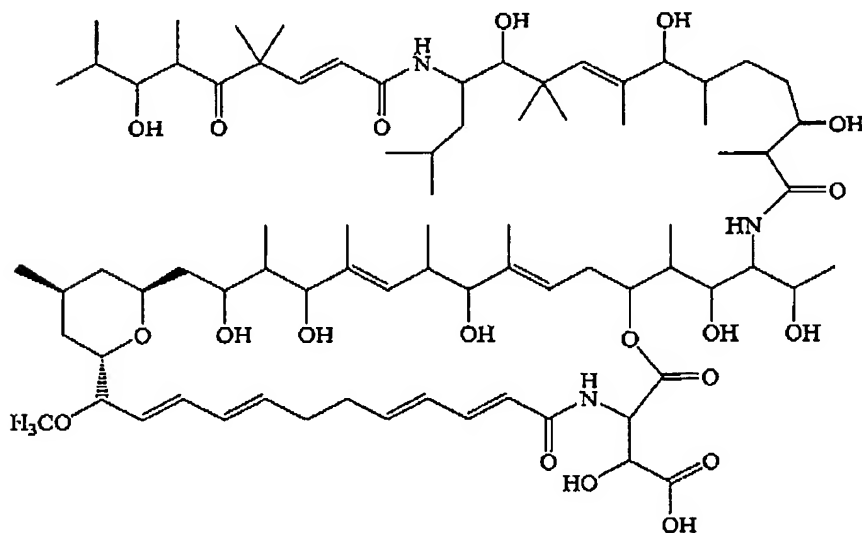
8. (Original) The compound of claim 1 of the formula:

Application No. 10/521,930

Reply to Office Action



9. (Original) The compound of claim 1 of the formula:



10. (Currently Amended) A composition comprising a therapeutically effective amount of at least one compound of claim 1, ~~optionally at least one additional therapeutic agent,~~ and a pharmaceutically acceptable carrier.

11. (Withdrawn) A method of preventing or treating a patient for a condition treatable by the inhibition of vacuolar-type (H<sup>+</sup>)-ATPase, said method comprising

Application No. 10/521,930

Reply to Office Action

administering to the patient a vacuolar-type (H<sup>+</sup>)-ATPase-inhibiting effective amount of at least one compound of claim 1, whereupon the patient is treated for the condition.

12. (Withdrawn) The method of claim 11, wherein said condition is selected from the group consisting of osteoporosis, Alzheimer's disease, glaucoma, fertility, abnormal urinary acidification, abnormal secretion of degradative enzymes, fungal infection and cancer.

13. (Withdrawn) The method of claim 11, wherein said vacuolar-type (H<sup>+</sup>)-ATPase inhibiting-effective amount is effective to inhibit one or more conditions selected from the group consisting of intra-organellar acidification of intracellular organelles, urinary acidification, bone resorption, fertility, drug-resistance of tumor cells, tumor cell proliferation, cellular invasiveness, angiogenesis, and metastasis.

14. (Canceled)

15. (Withdrawn) A method of preventing or treating a patient for cancer, which method comprises administering to the patient an anticancer effective amount of at least one compound of claim 1, whereupon the patient is treated for cancer.

16. (Canceled)

17. (Withdrawn) The method of claim 15, wherein the cancer is selected from the group consisting of human leukemias, lymphomas, melanomas and solid tumors.

18. (Withdrawn) The method of claim 17, wherein the solid tumor is selected from the group consisting of lung cancer, colon cancer, CNS cancer, melanoma, ovarian cancer, renal cancer, prostate cancer, head and neck cancer, testicular cancer, germ-line cancers, endocrine tumors, uterine cancer, breast cancer, sarcomas, gastric cancer, hepatic cancer, esophageal cancer and pancreatic cancer.

19. (Withdrawn) The method of claim 15, wherein the cancer is selected from the group consisting of colon cancer, melanoma, breast cancer, ovarian cancer and non-small lung cancer.

20.-22. (Canceled)